

# Gaining Substantial New Insights Into University Students' Self-Regulated Learning Competencies

## How Can We Succeed?

Barbara Schober,<sup>1</sup> Julia Klug,<sup>1</sup> Gregor Jöstl,<sup>1</sup> Christiane Spiel,<sup>1</sup> Markus Dresel,<sup>2</sup> Gabriele Steuer,<sup>2</sup> Bernhard Schmitz,<sup>3</sup> and Albert Ziegler<sup>4</sup>

<sup>1</sup>Department of Applied Psychology: Work, Education, and Economy, University of Vienna, Austria,

<sup>2</sup>Department of Psychology, University of Augsburg, Germany, <sup>3</sup>Department of Human Sciences, Technical University of Darmstadt, Germany, <sup>4</sup>Department of Psychology, University of Erlangen-Nuremberg, Germany

## Why Is It Important to Discuss New Directions?

Self-regulated learning (SRL) is a major issue in current educational research. A comprehensive body of evidence points to the relevance of SRL for creating lasting learning success in many learning contexts (Zimmerman & Schunk, 2011). SRL competences are of particular importance for success in higher education because students have to deal with rather unstructured contexts and diverse learning challenges (Peverly, Brobst, Graham, & Shaw, 2003).

Despite SRL's undeniable relevance and the large body of research attesting to this (Winne, 2005), some core issues – especially regarding learning at universities – have not been solved yet. We still do not know which components of SRL in which combination are crucial for success at university. Which aspects of SRL are relevant in which learning phases in which contexts? How do situational and personal factors interact? How do these competences actually develop under different institutional conditions?

Why do we still find substantial knowledge deficits in this intensively researched field? A closer look makes it obvious that research often concerns very specific details of the complex SRL construct, such as the interrelations among specific SRL components, teachers' effects on specific students' SRL strategies, or the effects of very specific contexts (e.g., Eccles & Wigfield, 2002). Furthermore, a variety of research approaches are used, based on different models, measures, and study designs. Consequently, results are often inconsistent.

Approaches and results therefore remain rather unconnected, and no comprehensive picture is able to emerge. However, if we want to create instructional designs that promote SRL at universities, we need a deeper comprehensive understanding of SRL competences and their development.

## Theoretical Models of SRL – Could They Be Integrated?

At present, there are several coexisting, rather separated models of SRL (Puustinen & Pulkkinen, 2001), classified as component-oriented models (e.g., Boekaerts, Pintrich, & Zeidner, 2000), defining three core strategy dimensions of SRL (cognitive, metacognitive, resource management strategies) and process-oriented models (e.g., Zimmerman & Schunk, 2011), defining SRL as a cyclical process made up of consecutive phases. In addition, SRL competences can be understood as knowledge about SRL that can be differentiated into three types of knowledge: declarative, procedural, and conditional knowledge, which also can be considered as consecutive stages of competence development (Dresel & Haugwitz, 2005). However, these dimensions of knowledge are not taken into account in the aforementioned models. Wirth and Leutner (2008) suggested defining SRL “as a learner's competence to autonomously plan, execute, and evaluate learning processes, which involves continuous decisions on cognitive, motivational, and behavioral aspects of the cyclic process of learning” (p. 103). This is a first step toward integration, but a systematic theoretical integration of the components, process, and knowledge types of SRL is still lacking. We (Dresel et al., in press) recently suggested a framework model that takes this challenge into account. In the proposed “3D cube model,” the strategy dimensions of SRL are related to their specific meaning at different phases of

the SRL process and to the kinds of knowledge necessary at each phase, respectively.

## Measures of SRL Competences – Could They Be Used in a More Coherent Way?

Existing measures can be divided into three waves (Panadero & Järvelä, 2014): (1) self-reports from a trait-like perspective (e.g., questionnaires, interviews), (2) “online” measures (e.g., thinking aloud protocols, traces) following a process perspective, and (3) measures that also function as interventions (e.g., learning diaries). In most cases, a lack of validity remains a basic critique. Often, declarative strategy knowledge is measured without taking real-life situations into account. Especially since SRL is conceptualized as a competence (Wirth & Leutner, 2008), new measures that take domain and situation specificity into account are recommended. Thus, as is the case with theoretical approaches, measures are criticized for being too specific as well as too artificial and irrelevant for complex real-life learning situations.

Consequently, we again argue for integration, here in the sense of systematic multi-method – multi-informant approaches (Azevedo, 2009). Furthermore, the measures ought to be directly connected to an integrated theoretical model as described above. The challenge is not simply to use many different instruments combining data on components, knowledge, and processes (see the model integration above), but to explicitly derive directly connected and meaningfully-combined sets of instruments from a coherent model. Based on such a model that takes into account the evidence that not all aspects of SRL are relevant in every phase of learning and in every context (Schober, 2014), a very specific combination of measures could be used. Subsequently, such an integrated approach could be extended to a longitudinal design investigating contextual effects and in a further step conducting interventions.

In sum, integration and thinking in more holistic dimensions could be identified as central desiderata for gaining deeper insight into underlying mechanisms of successful SRL. One might argue that this concern is a huge challenge, not really new and presumably the case in many fields. We would agree, but it seems as if there is still need for transferring this recognition into research practice, especially for SRL, which is highly complex but deeply relevant for sustainable learning success.

## Acknowledgment

This research was supported by the German Federal Ministry for Education and Research.

## References

- Azevedo, R. (2009). Theoretical, conceptual, methodological, and instructional issues in research on metacognition and self-regulated learning: A discussion. *Metacognition and Learning*, 4, 87–95. doi: 10.1007/s11409-009-9035-7
- Boekaerts, M., Pintrich, P., & Zeidner, M. (Eds.). (2000). *Handbook of self-regulation*. Orlando, FL: Academic Press.
- Dresel, M., & Haugwitz, M. (2005). The relationship between cognitive abilities and self-regulated learning: Evidence for interactions with academic self-concept and gender. *High Ability Studies*, 16, 201–218. doi: 10.1080/13598130600618066
- Dresel, M., Schmitz, B., Schober, B., Spiel, C., Ziegler, A., Engelschalk, T., . . . , & Steuer, G. (in press). Competencies for successful self-regulated learning in higher education: Structural model and empirical evidence from expert interviews. *Studies in Higher Education*.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109–132. doi: 10.1146/annurev.psych.53.100901.135153
- Panadero, E., & Järvelä, S. (2014, August). *Third wave on self-regulation measurement: When measuring is also an intervention*. Paper presented at the EARLI SIG1 conference, Madrid, Spain.
- Peeverly, S. T., Brobst, K. E., Graham, M., & Shaw, R. (2003). College adults are not good at self-regulation: A study on the relationship of self-regulation, note taking, and test taking. *Journal of Educational Psychology*, 95, 335–346. doi: 10.1037/0022-0663.95.2.335
- Puustinen, M., & Pulkkinen, L. (2001). Models of self-regulated learning: A review. *Scandinavian Journal of Educational Psychology*, 45, 269–286. doi: 10.1080/00313830120074206
- Schober, B. (2014, March). *Kompetenzen zum Selbstregulierten Lernen an Hochschulen – erste Befunde aus dem Projekt PRO-SRL* [Competencies regarding self-regulated learning at universities – first findings from the project PRO-SRL]. Invited paper presented at the Symposium Bildungsforschung 2020, Berlin, Germany.
- Winne, P. H. (2005). A perspective on state-of-the-art research on self-regulated learning. *Instructional Science*, 33, 559–565. doi: 10.1007/s11251-005-1280-9
- Wirth, J., & Leutner, D. (2008). Self-regulated learning as a competence: Implications of theoretical models for assessment methods. *Zeitschrift für Psychologie*, 216, 102–110. doi: 10.1027/0044-3409.216.2.102
- Zimmerman, B. J., & Schunk, D. H. (Eds.). (2011). *Handbook of self-regulation of learning and performance*. New York, NY: Taylor & Francis.

Barbara Schober

Department of Applied Psychology: Work, Education,  
and Economy  
University of Vienna  
Universitätsstraße 7  
1010 Vienna  
Austria  
Tel. +43 1 4277-47322  
Fax +43 1 4277-847322  
E-mail barbara.schober@univie.ac.at